

10/579692

AP20 Rec'd PCT/PTO 16 MAY 2006

Amended Claims (September 15, 2005)

1. A gradient amplifier for a magnetic resonance system, having an output stage (6) which can be supplied by an electrical energy source, the output stage (6) is connected on the input side to a control device (4), by whose control signal an output signal, dependent on a parameter value of the energy source, of the output stage (6) is controllable,

characterized in that a compensation device (9) is provided, which is connected to the energy source and to the control device (4), and by which the control signal is variable as a function of the parameter value.

2. The gradient amplifier as defined by claim 1, characterized in that a regulation system (1) is provided, which is connected on the input side to the output stage (6) and on the output side to the control device (4), and by whose regulator signal (RS) the control signal can be regulated as a function of the output signal of the output stage (6); and that the regulation system (1) is connected to the compensation device (9); and that by means of the compensation device (9), the regulator signal (RS) is variable as a function of the parameter value.

3. The gradient amplifier as defined by one of the foregoing claims, characterized in that the energy source is embodied as a voltage source; and that the parameter is the supply voltage.

4. The gradient amplifier as defined by one of the foregoing claims, characterized in that the control device (4) is

embodied as a pulse width modulator.

5. The gradient amplifier as defined by one of the foregoing claims,

characterized in that the compensation device (9) is embodied such that it can generate a compensation signal (K) that is dependent on the parameter value and on a nominal or maximal value of the parameter.

6. The gradient amplifier as defined by one of the foregoing claims,

characterized in that the compensation device (9) is connected on the output side to the control device (4) or to the regulation system (1).

7. The gradient amplifier as defined by one of the foregoing claims,

characterized in that a regulator signal amplification device (10) connected to the regulation system (1) is provided; and that the compensation device (9) is connected on the output side to the regulator signal amplification device (10).

8. A magnetic resonance system having a gradient amplifier as defined by one of the foregoing claims.

9. A method for controlling a gradient amplifier for a magnetic resonance system having an output stage (6) which is supplied by an electrical energy source, including the following steps:

- ascertaining a parameter value of the energy source;
- generating a compensation signal (K) as a function of the parameter value;
- generating a control signal as a function of the compensation signal (K); and

- by means of the output stage (6), generating an output signal as a function of the control signal.

10. The method as defined by claim 9, including the further steps:

- ascertaining a parameter value of the output signal;
- generating a regulator signal as a function of the parameter value of the output signal; and
- generating the control signal as an additional function of the regulator signal.